114 -001

Ritter® by MIDMARK

Power
Podiatry
Chair

Serial Number Prefix: L

This manual applies to 114 units with Serial Numbers from L1139 and beyond.

Service and Parts Manual

Supplement to Model 114
Service Manual
Part Number 003-0168-00

FOR USE BY MIDMARK
TRAINED TECHNICIANS ONLY

Part No. 003-0265-00 Rev. D (1/01/04)

DESIGN IMPROVEMENTS ON THE MODEL 111 & 114 TABLES REQUIRE REVISED INSTRUCTIONS ON THE INSTALLATION OF CYLINDERS, HOSES, AND THE POWER CORD. FOR ALL OTHER SERVICE QUESTIONS REFER TO MAIN TEXT OF SERVICE MANUAL 003-0168-00.

REMOVAL AND REPLACEMENT OF POWER CORD

1. Remove Motor Cover. See "Removal of Motor Cover" on Page 7.

2. Remove Strain Relief Bushings, Item "A", Fig. 32, from cord by grasping bushing with hand pliers (See "Special Tools" on Page 19), squeezing tab on bushing, and pulling bushing out of hole in base.

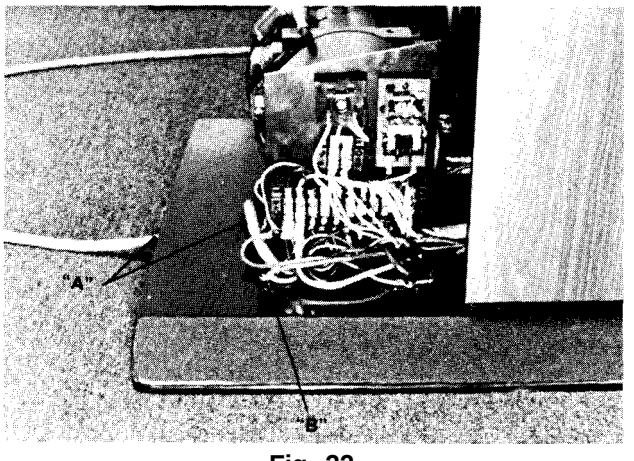


Fig. 32

3. Remove the black and white wire of old cord from terminal board, noting the position of the wires.

4. Remove (1) screw, Item "B", Fig. 32, securing the green ground wire to the base.

5. Before pulling the old cord through the base, bundle the wires together and secure them with a length of string. This string will act as a guide to reinstall the new cord.

6. Pull the old cord and string through the base. With the string still running through the base, untie the end securing the wires.

7. Bundle the leads of the new power cord together. Tie these ends together with the string running through the base. Gently pull the power cord through the base; disconnect the string.

a. Install new power cord by connecting black and white wire to terminal board and installing (1) # 10-24 x 318 self-tapping screw, Item "B", Fig. 32, through the green grounding wire terminal to secure the ground wire to the table base.

9. Position Strain relief bushings on the cord, close the bushings, grasp bushings with hand pliers squeezing the tab, and push bushings into holes in base.

10. Replace Motor Cover. See "Replacement of Motor Cover" on Page 7.

REMOVAL AND REPLACEMENT OF HYDRAULIC CYLINDERS

BACK CYLINDER

DANGER: WHEN CHANGING A CYLINDER, NOTE HOW THE WIRES, HOSES, HOSE FITTINGS, AND NYLON TIES ARE POSITIONED SO THAT THEY MAY BE REPLACED EXACTLY THE SAME WAY OR DAMAGE TO THE WIRES AND HOSES MAY OCCUR RESULTING IN ELECTRICAL SHOCK OR EQUIPMENT DAMAGE.

1. Remove Motor Cover, Front Outer Shroud (Foot End), and Front Inner Shroud (Foot End). See "Motor Cover and Shroud Removal" on page 7.

2. Remove Back Cover Shroud from Back Section by removing (4) screws, Item "A", Fig. 3.

3. With an assistant supporting the Back Section, remove the "E" Ring and Clevis Pin, Item "A", Fig. 33. Let Cylinder hang by clevis. See Fig. 34.

DANGER: BACK SECTION MUST BE SUPPORTED UNTIL NEW CYLINDER IS INSTALLED. FAILURE TO SUPPORT BACK SECTION COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

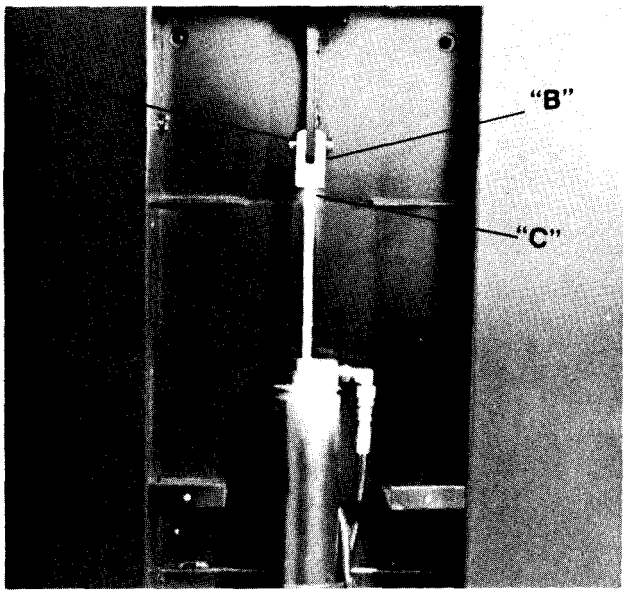


Fig. 33

4. Remove (2) large nylon ties from cylinder, Item "A", Fig. 34.

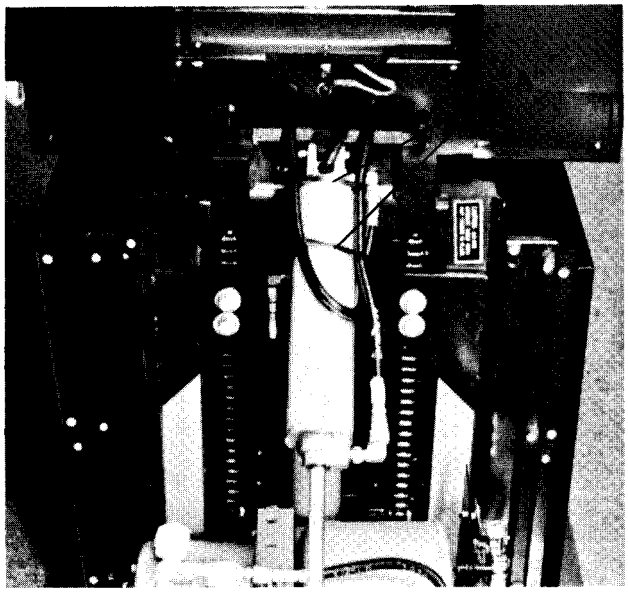


Fig. 34

5. Remove the (2) Hose Fittings from the defective cylinder using 9/16'' and 7/16'' wrenches.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN ELECTRICAL SHOCK.

6. Remove "E" ring and clevis pin from valve end of cylinder to remove cylinder from table. Remove elbow from cylinder port and install in new cylinder.

7. Allow defective cylinder to hang by cord.

8. Place new cylinder in position and install clevis pin and "E" ring at valve end of cylinder.

9. Connect hose fittings tightly to new cylinder. Lay solenoid electric cord along side of hoses.

10. Install (2) Nylon Ties, Item "A", Fig. 34, on the cylinder.

11. Follow defective cylinder solenoid cord from cylinder to terminal board, noting the placement of nylon ties and clamps.

12. Lay new cylinder solenoid cord along side of defective cylinder solenoid cord, replacing ties and clamps as you remove the defective cylinder cord and replace with new cylinder cord.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN ELECTRICAL SHOCK.

13. Remove defective cylinder cord from terminal board and replace with new cylinder cord. See Wiring Diagram on Page 27.

14. Temporarily plug the power cord into an electrical outlet and fully extend the back cylinder rod by depressing the "Back Up" footswitch pedal.

15. Position the back section and back cylinder as shown in Fig. 33 and install clevis pin and "E" ring, Item A, Fig. 33.

16. After installation. of new cylinder, check to see that all cords and hoses work freely and are clear of obstructions.

17. Position the table as shown in Fig. 35. The table top should be level. If the back section tilts down, then adjust the clevis, Item B, Fig. 33 out. If the back section tilts up, then adjust the clevis, Item "B", Fig. 33 in. To adjust the clevis, turn the cylinder rod using a 318" open end wrench. The rod will turn easiest when it is extended about half of its total extension.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

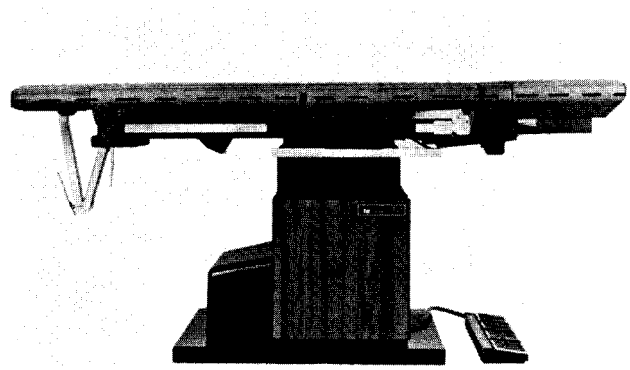


Fig. 35

18. If loss of hydraulic fluid was excessive during repair, oil must be added to the system. Oil level should be checked and oil replenished if required. See Adding Oil to Hydraulic System on Page 13.

19. Place back cover shroud in position, align holes and install (4)# 6 x 1/4'' screws, Item A, Fig. 3.

20. Replace shrouds and motor cover. See Replacement of Motor Cover & Shrouds on Page 7.

TILT CYLINDER

DANGER: WHEN CHANGING A CYLINDER, NOTE HOW THE WIRES, HOSES, HOSE FITTINGS, AND NYLON TIES ARE POSITIONED SO THAT THEY MAY BE REPLACED EXACTLY THE

SAME WAY OR DAMAGE TO THE WIRES AND HOSES MAY OCCUR RESULTING IN ELECTRICAL SHOCK OR EQUIPEMENT DAMAGE. See Fig. 36.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

1. Remove motor cover, front outer shroud (foot end), and front inner shroud (foot end). See Motor Cover & Shroud Removal on Page 7.

2. With an assistant supporting the table top, remove the "E" ring and clevis pin, Item A, Fig. 36.

DANGER: TABLE TOP MUST BE SUPPORTED UNTIL NEW CYLINDER IS INSTALLED. FAILURE TO SUPPORT TABLE TOP COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

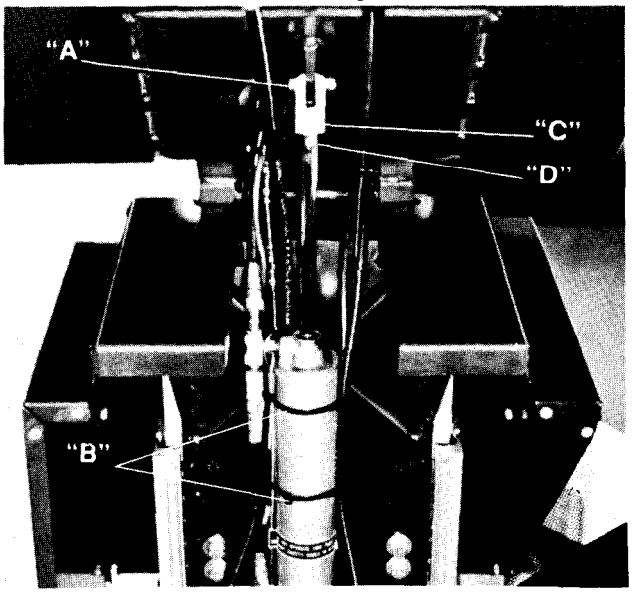


Fig. 36

3. Remove the (2) large nylon ties, Item B, Fig. 36 from the cylinder.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN ELECTRICAL SHOCK.

4. While supporting the defective cylinder, remove (4) hose fittings from the cylinder using 9/16" and 7116" wrenches. Remove the "E" ring and clevis pin from valve end of cylinder to remove from the table. Remove fittings from cylinder ports and install in new cylinder making sure safety cable is reinstalled.

5. Allow defective cylinder to hang by cord.

6. Place new cylinder in position. Install clevis pin and "E" ring at valve end of cylinder and connect hose fittings tightly.

7. Install nylon ties, Item B, Fig. 36 on the cylinder.

8. Follow defective cylinder solenoid cord from cylinder to terminal board, noting the placement of nylon ties and clamps.

9. Lay new cylinder solenoid cord along side of defective cylinder solenoid cord, replacing ties and clamps as you remove the defective cylinder cord and replace with new cylinder cord.

10. Remove defective cylinder cord from terminal board and replace with new cylinder cord. See Wiring Diagram on Page 27.

11. Temporarily plug the power cord into an electrical outlet and extend the tilt cylinder rod by depressing the "Tilt Up" footswitch pedal.

12. Position the table top and tilt cylinder as shown in Fig. 36 and install clevis pin and "E" ring, Item A, Fig. 36.

13. After installation of new cylinder, check to see that all cords and hoses work freely and are clear of obstructions.

14. Position the table as shown in Fig. 35. The table top should be level. If the top is not level, the clevis, Item C, Fig. 36, must be adjusted in or out accordingly. To adjust the clevis, turn the cylinder rod using a 3/8" open end wrench on the wrenching flats, Item D, Fig. 36. The rod will turn easiest when it is extended about half of its total extension.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

15. If loss of hydraulic fluid was excessive during repair, oil must be added to the system. Oil level should be checked and oil replenished if required. See Adding Oil to Hydraulic System on Page 13.

16. Replace shrouds and motor cover. See Replacements of Motor Cover & Shrouds on page 7.

FOOT CYLINDER

DANGER: WHEN CHANGING THE CYLINDER, NOTE HOW THE WIRES, HOSES, HOSE FITTINGS, AND NYLON TIES ARE POSITIONED SO THAT THEY MAY BE REPLACED EXACTLY THE SAME WAY OR DAMAGE TO THE WIRES AND HOSES MAY OCCUR RESULTING IN ELECTRICAL SHOCK OR EQUIPMENT DAMAGE.

1. Position the table as shown in Fig. 37.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

2. Remove motor cover, front outer shroud (foot end), and front inner shroud (foot end). See Motor Cover & Shroud Removal on Page 7.

3. Loosen hose clamps, Item A., Fig. 37.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

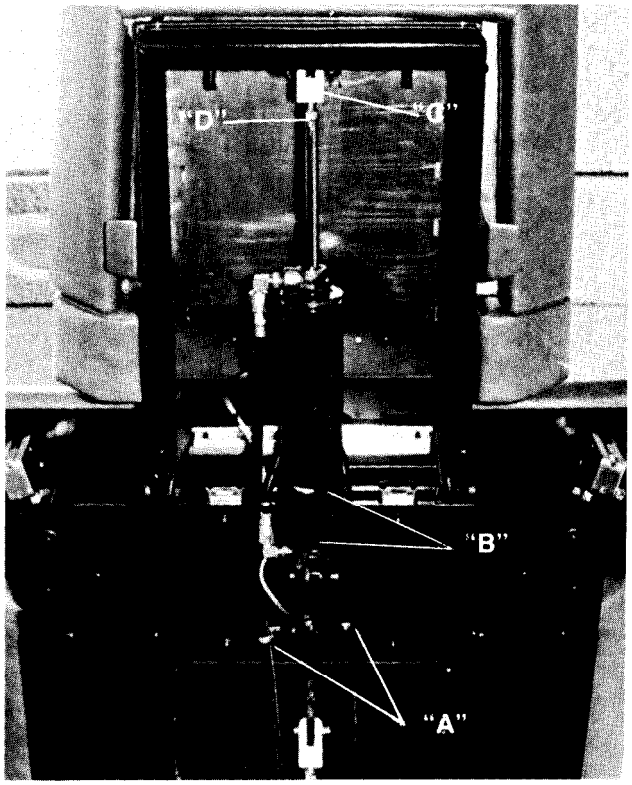


Fig. 37

5. Remove (2) cable ties from cylinder, Item B, Fig. 37.

6. Remove the (2) hose fittings from the defective cylinder using 7/16'' and 9/16'' wrenches.

7. With an assistant supporting the foot rest frame, remove the defective cylinder by removing the cotter pin and clevis pin from the rod end of the cylinder and the "E" ring and clevis pin from the valve end of the cylinder. Remove fittings from cylinder port and install in new cylinder.

8. Place the new cylinder in position and install the clevis pin and ''E'' ring at the valve end of the cylinder and the clevis pin and cotter pin at the rod end of the cylinder.

9. Connect the hose fittings tightly to new cylinder.

10. Follow defective cylinder solenoid cord from cylinder to terminal board, noting the placement of nylon ties and clamps.

11. Lay new cylinder solenoid cord along side of defective cylinder solenoid cord, replacing ties and clamps as you remove the defective cylinder cord and replace with the new cylinder cord.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN ELECTRICAL SHOCK.

12. Remove defective cylinder cord from terminal board and replace with new cylinder cord. See Wiring Diagram on Page 27.

13. After installation of new cylinder, check to see that all cords and hoses work freely and are clear of obstructions.

14. Temporarily plug the power cord into an electrical outlet and position the table as shown in Fig. 35. The table top should be level. If the top is not level, the clevis, Item C, Fig. 37, must be adjusted in or out accordingly. To adjust the clevis, turn the cylinder rod using a 3/8'' open end wrench on the wrenching flats, Item D, Fig. 37. The rod will turn easiest when it is extended about half of its total extension.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

15. If loss of hydraulic fluid was excessive during repair, oil must be added to the system. Oil level should be checked and oil replenished if required. See Adding Oil to Hydraulic System on Page 13.

16. Replace shroud and motor cover. See Replacement of Motor Cover & Shrouds on Page 7.

BASE CYLINDER

DANGER: THREE PERSONS ARE REQUIRED TO CHANGE A BASE CYLINDER. TWO PERSONS MUST SUPPORT THE TABLE TOP AS THE THIRD PERSON REMOVES THE CYLINDER. FAILURE TO USE THREE PERSONS COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

DANGER: WHEN CHANGING A CYLINDER, NOTE HOW THE WIRES, HOSES, HOSE FITTINGS, AND NYLON TIES ARE POSITIONED SO THAT THEY MAY BE REPLACED EXACTLY THE SAME WAY OR DAMAGE TO THE WIRES AND HOSES MAY OCCUR RESULTING IN ELECTRICAL SHOCK OR EQUIPMENT DAMAGE. See Fig. 33 & 38.

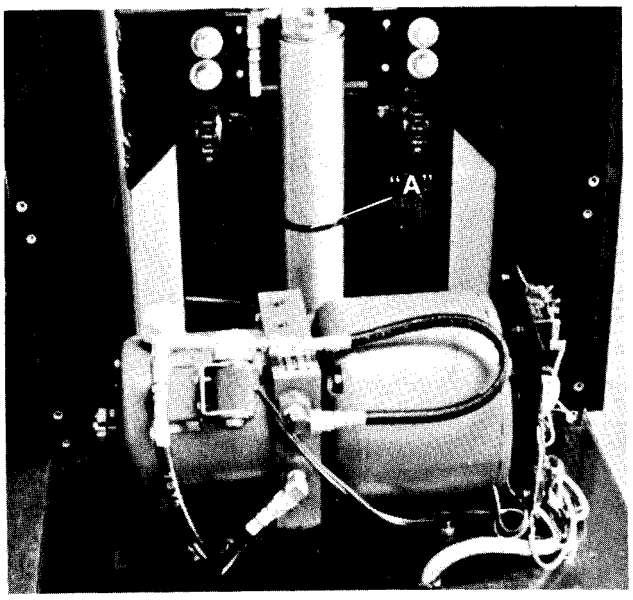


Fig. 38

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

1. Remove motor cover, rear outer shroud (motor end), and rear inner shroud (motor end). See Motor Cover & Shroud Removal on Page 7.

2. Remove brace by removing (4) bolts with a 9/16" wrench.

3. Remove large nylon ties, Item A, Fig. 38, from cylinder.

DANGER: BE SURE POWER CORD IS DISCONNECTED FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN ELECTRICAL SHOCK.

4. Follow cylinder solenoid cord to terminal board and remove cord from terminal board.

5. With two assistants lifting on the table top at points A, Fig. 39, one assistant on each side of the table:

   a. Remove the (3) hose fittings from the defective cylinder using 7116" and 9/16" wrenches.

   b. Remove cotter pins and clevis pins from each end of cylinder to remove cylinder from table.

   c . After cylinder is removed from the table, have the assistants slowly lower the table top to its lowest height. Remove fittings from defective cylinder port and install on new cylinder.

DANGER: WHEN REMOVING THE CLEVIS PINS FROM THE BASE CYLINDER, THE TWO ASSISTANTS MUST SUPPORT THE TABLE TOP. KEEP HANDS AWAY FROM THE TOP OF THE SLIDES, POINT A, FIG. 40 AND FROM BENEATH THE BASE SLIDING MEMBER. AFTER REMOVING THE CYLINDER, STAND CLEAR OF THE TABLE AS THE TWO ASSISTANTS LOWER THE TABLE TOP. FAILURE TO DO THIS COULD RESULT IN SERIOUS PERSONAL INJURY.

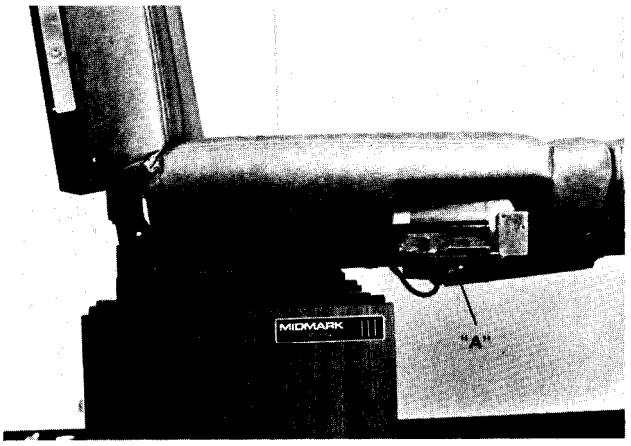


Fig. 39

6. Place new cylinder in position and install clevis pin and cotter pin at valve end of cylinder.

7. Connect the (3) hose fittings tightly to the new cylinder.

8. Have the two assistants lift on the table top enabling the clevis pin, Item B, Fig. 40 to be installed along with the cotter pin.

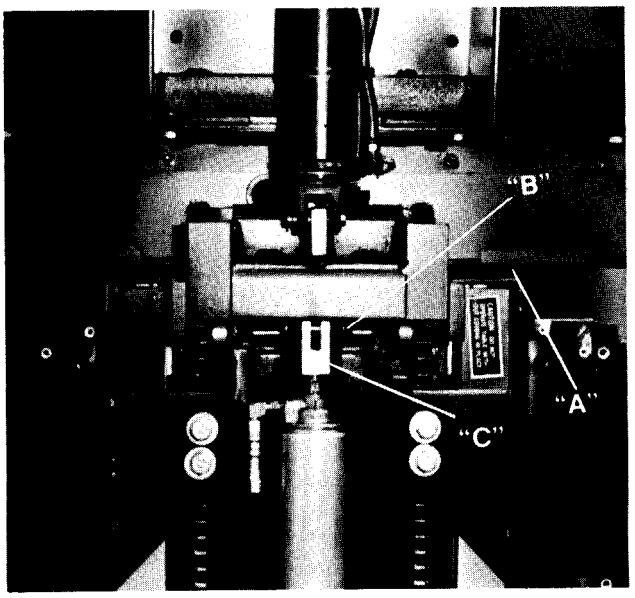


Fig. 40

9. Install the large nylon tie, Item A, Fig. 38, on the cylinder.

10. Install new cylinder solenoid cord on terminal board. See Wiring Diagram on Page 27.

11. Temporarily plug the power cord into an electrical outlet and extend and retract the base cylinder a few times by depressing the "Table Up & Down" footswitch pedals alternately.

12. Fully retract the base cylinder and adjust for a 1116" to 1/8'' gap "A", Fig. 40 above the slides. To adjust for this gap, the clevis (rod end) must be adjusted in or out accordingly. To adjust the clevis, turn the cylinder rod using a 3/8'' open end wrench on the wrenching flats, Item C, Fig. 21. The rod will turn easiest when it is extended about half of its total extension.

CAUTION: FAILURE TO ADJUST FOR A 1116" TO 1/8'' GAP AND NO MORE THAN THIS COULD RESULT IN EQUIPMENT DAMAGE.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

13. If loss of hydraulic fluid was excessive during repair, oil must be added to the system. Oil level should be checked and oil replenished if required. See Adding Oil to Hydraulic System on Page 13.

14. Replace brace, align holes, and install (4) 318" - 16 x 7/8'' hex head bolts and (4) 3/8'' lockwashers.

15. Replace shrouds and motor cover. See Replacement of Motor Cover & Shrouds on Page 7.

HOSE LINE LEAKS

If a hose line is leaking, remove and replace that hose section. No longer must the total assembly be replaced.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

DANGER: WHEN CHANGING A HOSE, NOTE HOW THE WIRES, HOSES, HOSE FITTINGS, AND NYLON TIES ARE POSITIONED SO THAT THEY MAY BE REPLACED EXACTLY THE SAME WAY OR DAMAGE TO THE WIRES AND HOSES MAY OCCUR RESULTING IN ELECTRICAL SHOCK OR EQUIPMENT DAMAGE.

1. Remove covers from suspected area of leak.

   a. Removal of motor cover and shrouds on Page 7.
   b . Removal of back cover. Remove (4) screws Item A, Fig. 3.
   c . Removal of base brace. Remove (4) 3/8'' -16 x 7/8'' Hex Bolts and (4) 3/8'' Lockwashers.

2. Examine hoses to find location of leak. If excessive oil on hose lines make leak source difficult to locate, clean all surfaces with rag, cycle table once. Examine hose lines for leak.

3. After determining source of leak, place new hose along side of damaged hose before removing defective hose. (See identification of hoses following this section.)

4. Remove fittings, using 7116" and 9116" wrenches, and nylon ties of defective hose, one at a time, replacing with fittings of new hose and nylon ties.

5. After installation of new hose, check to see that all cords and hoses work freely and are clear of obstructions and that all fittings are tight.

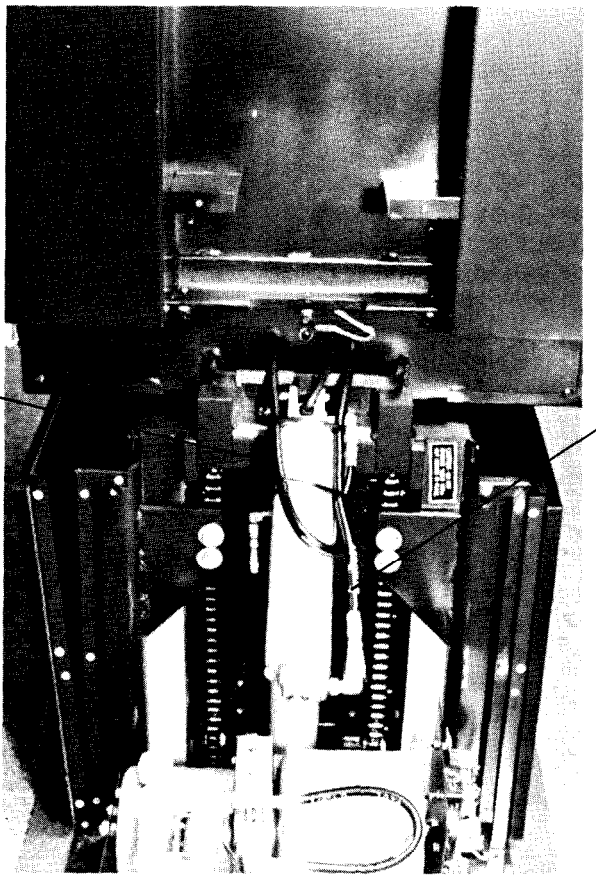
6. Temporarily plug the power cord into an electrical outlet and extend and retract each cylinder several times to purge the system of air.

DANGER: DISCONNECT POWER CORD FROM WALL RECEPTACLE. FAILURE TO DISCONNECT POWER CORD COULD RESULT IN PERSONAL INJURY.

7. If loss of hydraulic fluid was excessive during repair, oil must be added to the system. Oil level should be checked and oil replenished if required. See Adding Oil to Hydraulic System on Page 13.

8. Replace any shrouds or covers removed for access to leaking hose.

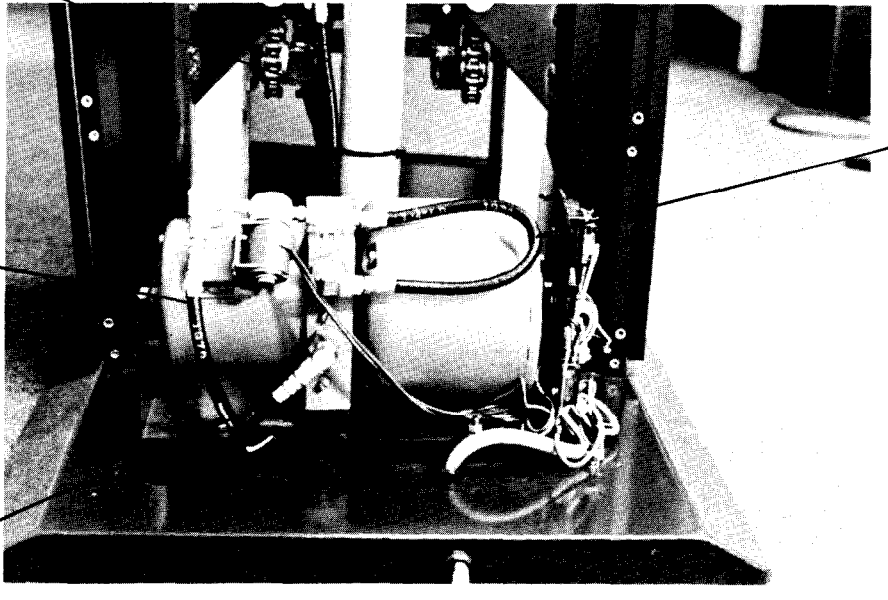
HOSE IDENTIFICATION



002-0125-w
POWER HOSE KIT
(Tilt to Back)

002-0126-00
RETURN HOSE KIT
(Tilt to Back)

002-0120-00
RETURN HOSE KIT
(Base Cylinder)

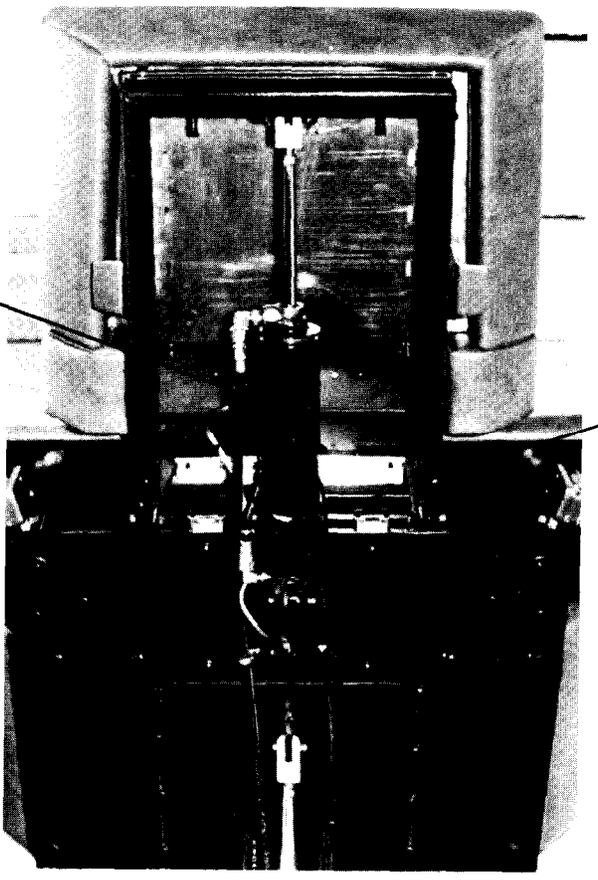


002-0117-00
PUMP HOSE KIT

002-0118-00
RETURN HOSE KIT
(Pump to Base)

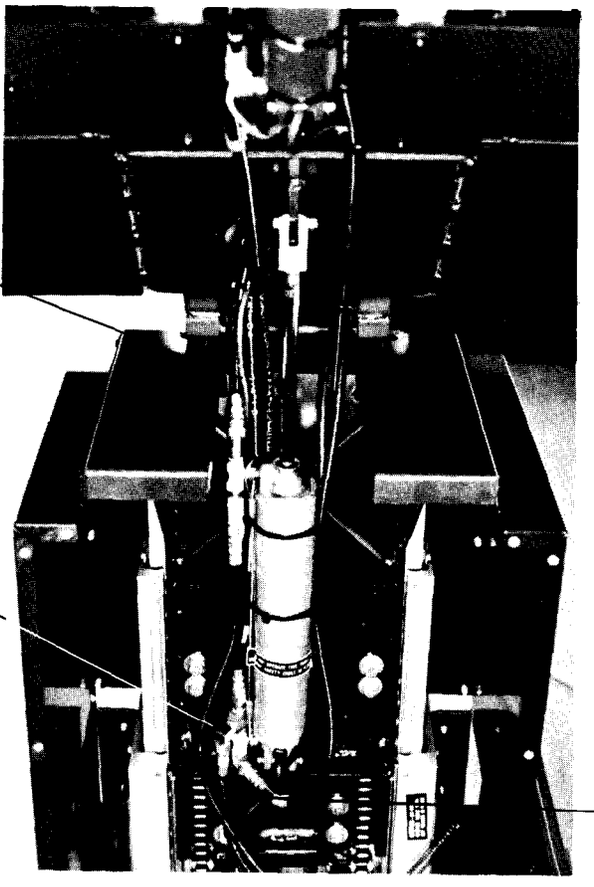
002-0119-00
POWER HOSE KIT
(Pump to Base)

HOSE IDENTIFICATION



002-0124-00
RETURN HOSE KIT
(Tilt to Foot)

002-0123-00
POWER HOSE IKIT
(Tilt to Foot)

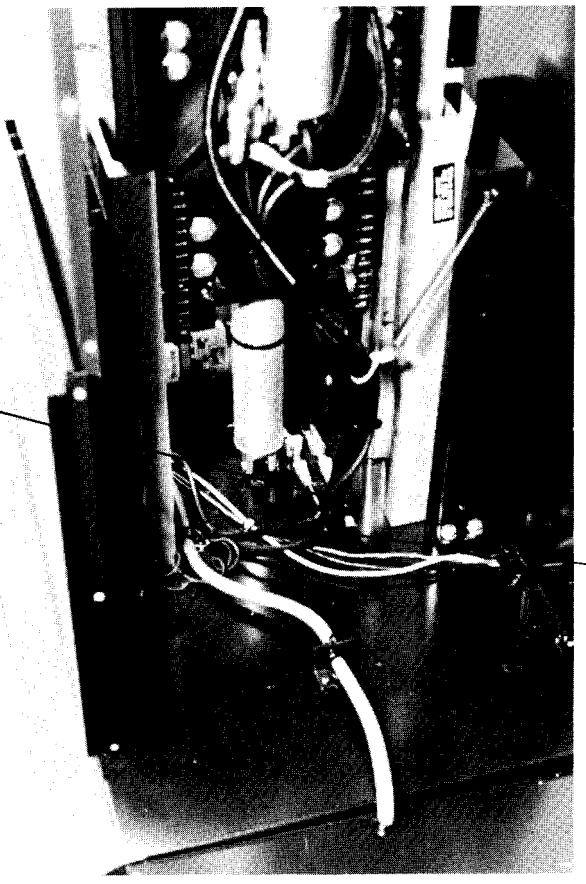


002-0126-00
RETURN HOSE KIT
(Tilt to Back)

002-0122-00
RETURN HOSE KIT
(Base to Tilt)

002-0121-00
POWER HOSE KIT
(Base to Tilt)

HOSE IDENTIFICATION



All hoses have part numbers marked on a silver band wrapped around the hose body. These numbers can be used to further identify each assembly.

Kit Number	contains	Hose Assembly
002-0118-00		014-0104-03
002-0119-00		014-0104-05
002-0120-00		014-0104-00
002-0121-00		014-0104-06
002-0122-00		014-0104-02
002-0123-00		014-0104-07
002-0124-00		014-0104-04
002-0125-00		014-0104-02
002-0126-00		014-0104-01

Notes

Ritter®

MIDMARK CORPORATION, VERSAILLES, OHIO 45360 937-526-3662

All products subject to improvement changes without notice!

Litho in U.S.A. Industry code 0251 003-0265-00/12-87/200/POST

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